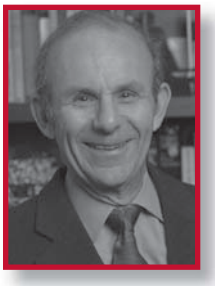
Updates on friends and colleagues in the materials community

David N. Seidman to Deliver 2011 Institute of Metals Lecture

David N. Seidman, Walter P. Murphy Professor of Materials Science and Engineering, Northwestern University, and 1997 TMS Fellow, has been selected to give the Institute of Metals Lecture and receive the Robert Franklin Mehl Award for outstanding scientific leadership at the TMS 2011 Annual Meeting in San Diego, February 27–March 3. Seidman's lecture is tentatively titled, "The Ubiquitous Interfacial Free Energy in Materials Science."



Seidman is considered one of the world's leading authorities in atom-probe tomography, and is credited for designing the first atom-probe field ion microscope (FIM) with full computer control for high mass resolution, setting the standard for future instrument design. His research has led to major advances in the understanding of the behavior of vacancies and self-interstitial atoms in metals, particularly in connection with radiation damage and dislocation interactions. The founding director of the Northwestern University Center for Atom-Probe Tomography, Seidman has pioneered the use of FIM and three-dimensional atom probe tomography to study interfaces, segregation, and precipitation in metals and metal alloy systems on an atomic scale. He has earned numerous awards, honors, and professional recognitions, most recently being named a 2010 Fellow by the Materials Research Society.

Iver Anderson Recognized for Excellence in Technology Transfer

Iver Anderson, senior metallurgist at the U.S. Department of Energy's (DOE) Ames Laboratory and chair of the TMS Materials and Society Committee, recently received a national Excellence in Technology Transfer Award from the Federal Laboratory Consortium (FLC). He was recognized for his work on a lead-free solder alloy with wide industry acceptance. A durable, environmentally safe alternative to traditional tin-lead solder for joining electronic micro-circuits and electrical contacts, the alloy is Ames Laboratory's most successful technology to date. It is currently licensed to more than 50 companies worldwide and has generated more than $20 million in royalties.

The FLC is a nationwide network of more than 700 major federal laboratories and centers, as well as their parent departments and agencies. Anderson's was one of five DOE technology transfer successes selected in 2010 for the national FLC award from across all federal government research laboratories.

TMS Announces *JEM* Best Paper Award

To recognize outstanding scientific or engineering contributions in the electronic materials field, TMS has established the *Journal of Electronic Materials (JEM),* Best Paper Award. Papers published in *JEM* between July 2009 and June 2010 are eligible for the inaugural award. The winner can accept the award at either the TMS 2011 Annual Meeting or the 2011 Electronic Materials Conference.

To nominate a paper, send a copy of the article, along with the nominator's letter of endorsement and recommendation to Deborah Price, TMS student affairs & awards administrator, at price@tms.org. The deadline for nominations is October 15, 2010.

DIRAN APELIAN EARNS BRITISH FOUNDRY MEDAL

Diran Apelian, TMS 2008 President, has been awarded the 2010 British Foundry Medal for his paper, "Pressure Assisted Processes for High Integrity Aluminum Castings." Parts 1 and 2 of the paper were published in the October and November 2009 issues of *Foundry Trade Journal*. He will be presented the medal at the Institute's Annual Awards ceremony on October 9, 2010. Apelian is the Howmet Professor of Mechanical Engineering and director of the Metal Processing Institute at Worcester Polytechnic Institute.

IN MEMORY OF BILL BUCKMAN

Raymond W. "Bill" Buckman, a TMS member since 1961, passed away at his home in Pleasant Hills, Pennsylvania, on April 16, 2010. He was 79.

A metallurgical engineer specializing in advanced materials, Buckman was employed by Westinghouse Electric Corporation for more than 30 years, where he managed a variety of projects and initiatives. His work ranged from developing wind turbine, fuel cell, and solar technology, to inventing and characterizing refractory metal alloys, to helping design a nuclear-powered rocket for propelling spacecraft to the outer planets. He eventually held about two dozen patents and authored more than 100 technical papers.

Upon leaving Westinghouse, Buckman formed a consulting company, Refractory Metals Technologies. In recent years, he developed a new metal alloy for stents used in heart surgery, prompting him to remark to friends and colleagues, "My career has gone from outer space to inner space." The library at the former Westinghouse Astronuclear Laboratory in Large, Pennsylvania, where Buckman spent most of his career at Westinghouse, has been named in his honor.

Meet a Member: Jay Narayan Named 2011 *Acta Materialia* Gold Medal Recipient

By Lynne Robinson

"Materials science is an enabling science which connects us to technology and society. This aspect of materials fascinated me the most," recalls Jagdish (Jay) Narayan of his decision to switch from mechanical engineering to materials as an undergraduate student at the Indian Institute of Technology Kanpur. "I realized that major changes in our civilization have occurred as a result of materials revolutions—from stone, to iron, to bronze, to semiconductor. Everything is made out of materials—and the bottleneck for every new technology is often materials."

Breaking those bottlenecks has been Narayan's professional mission for nearly 40 years, with his many contributions most recently being recognized with the 2011 *Acta Materialia* Gold Medal and Prize.. *Acta Materialia*, Inc. represents 33 professional societies worldwide in publishing two highly regarded international journals. Awarded by the *Acta Materialia* Board of Governors, the Gold Medal honors one exceptional person annually for lifetime achievements in materials science research and leadership. "I am deeply honored and profoundly humbled by this international recognition by my peers," said Narayan, the North Carolina State University John C.C. Fan Family Distinguished Chair Professor, Materials Science and Engineering. "This is also very special because I published my first three papers in *Acta* journals."

The path leading Narayan to many of his discoveries began at the University of California, Berkeley, where he earned both his master's degree and Ph.D. in just two years. "I realized very quickly that the property of every solid state material is controlled largely by defects and interfaces, grain boundaries included," he said. "Using laser-based processing methods, it was possible for me to control the microstructure and create exciting materials with unique properties and profound implications for solid state devices."

Since then, Narayan has made fundamental contributions in defects, diffusion, ion implantation and laser-solid interactions. These, in turn, have led to major materials breakthroughs, including laser-diffused solar cells, formation of supersaturated semiconductor alloys, metal-ceramic nanocomposites, novel ZnMgO and ZnCdO alloys, ZnO-based transparent conductors, and new nanostructured materials with improved properties. Narayan said he is particularly pleased with his invention of domain matching epitaxy, which is based on matching integral multiples of lattice planes across the film-substrate interface to address epitaxial growth across the misfit scale on polar, as well as nonpolar, substrates. He also cites his development of quantum-confined GaN-based NanoPocket LEDs as another career highlight. "These stand to revolutionize next-generation solid state devices with integrated functionality," he said.

Jagdish (Jay) Narayan: "I am very excited about the future of materials science. Nanotechnology innovations, for instance, are leading to super strong materials, high-efficiency LEDs for solid state lighting, and improvement in fuel efficiency and reduction in environmental pollution."

Mostly, looking back on his career, Narayan said he feels "very fortunate to have a large number of very talented graduate students, post docs, and collaborators worldwide."

A TMS Life Member and 1999 TMS Fellow, Narayan notes that, in his experience, few achievements come without first having to overcome any number of challenges. It's important, he cautions, that scientists and engineers just entering the field learn to take these in stride. "Sometimes, you have to stop pursuing certain research, no matter how exciting it is, because funding for it has ended," he said. "You have to spend a lot more time managing your research now—It leaves that much less time for innovative thinking and takes time away from your family and personal life, which is unhealthy and unsustainable. It is important to find a balance, have fun, and do some good for society through your research innovations."

Making an impact on society, whether improving health and healing through biomedical advances or addressing global energy and sustainability issues, is well within the grasp of any materials scientist and engineer, said Narayan, observing, "For every advanced technology, there is a materials problem which needs a solution."

Details on events and symposia celebrating this pinnacle achievement in Narayan's career will be announced at a later date.

Each month, *JOM* profiles a TMS member and his or her activities both in and out of the realm of materials science and engineering. To suggest a candidate for this feature, contact Maureen Byko, *JOM* editor, at *mbyko@tms.org*.